



CASE STUDY

Sandford Award Criteria 5

Educational resources and facilities are provided which enhance the quality of the learners' visit

Interpretative resources at the enhance children's learning that the Herschels were ordinary people doing extraordinary things'

Herschel Museum of Astronomy, Somerset



The Herschel Museum has two elements: the small townhouse in Bath where William Herschel and his sister Caroline lived between 1777 and 1784; and the collections related to their astronomical research. It was from this house, using a telescope of his own design that William discovered the planet Uranus in 1781. The museum is run by the Bath Preservation Trust (BPT), along with No. 1 Royal Crescent, Beckford's Tower and the Building of Bath Museum.

The Session: Amazing Astronomy – KS2 science and history

A ‘sense of place’

The story of William and Caroline Herschel is a central feature of the heritage education offer at the site. The period house itself has been interpreted in a way that emphasises the domestic background to the ground breaking work of the Herschels, with low ceilings, narrow staircases, kitchen table with talking points (sugar loaf, spices and an intriguing block of compressed Chinese tea) and above all the claustrophobic workshop.

Some of the rooms in the Herschel Museum have been converted into galleries, containing objects related to Herschel’s research, as well as replicas which visitors can handle.

Greeting and orientation was efficient and informative. The Learning and Engagement Officer (LO) ... introduced key concepts at this point which would be cemented during the day. The ‘sense of place’ and heritage context were exceptionally well presented, along with the word ‘orrery’, which was to be a central part of the day. Highly significant was the introduction of Caroline Herschel to the session: she was initially little more than a live-in maid for her brother but was able to overcome the prejudices of the time to become an astronomer in her own right. In the kitchen where she scrubbed the floors was also the window where she made mathematical calculations from the coordinates called out by her brother looking through his telescope in the garden. The visit was an equally positive learning experience for the girls as well as the boys.

The class was split into two groups ... a 10 minute video about the Herschels, the 18th century and astronomy .. ‘set the scene’ for the day’s activities. After the video, the group began to explore the house, led by the LO (and the other group by a volunteer).

‘The children understood that the Herschels were ordinary people doing extraordinary things’

The house is very small and is cramped even for groups of 14. Nevertheless the domestic and homely nature of the site is one of the key features which help to demystify science. The children understood that the Herschels were ordinary people doing extraordinary things. This was especially true of the workshop where they saw a replica of the tiny home-made furnace, more like a barbeque, and workbench where William Herschel cast, ground and polished mirrors for his telescopes.

There was good open-ended questioning, for instance ‘we don’t know where William put his telescope in this garden; where would you have yours?’ ... and skilled questioning drew out children’s understanding of what it might have been like to live here over two centuries ago. Children were very impressed to find out that this tiny house, in their own city, was so influential in the history of astronomy.

An attractively printed trail sheet was used, but more as an aide-memoire for the visit than as a learning activity in its own right. The teacher commented that she would find the sheets more useful back in the classroom, recognising that they can pose a barrier between the learner and the experience of the heritage. The open-ended questions on the sheet certainly led to discussion between the pupils.

Cementing learning

The second part of the visit took place in the education room at No.1 Royal Crescent, and involved the pupils painting planets to make their own orreries. This session allowed pupils with different learning styles to cement what they had learnt in the Herschel house, and like the trail sheets would enable the teacher to tap into the different memories of the day in subsequent weeks, as the 'Space' topic developed.

Discussion with the teacher, support staff and pupils showed that this had been a very successful visit which would live long in their memories and – more to the point – launch some really exciting work in school.

An experience impossible to replicate in the classroom

There was a laudable variety of approaches during the visit observed, allowing the site staff and volunteers to engage with pupils with different learning styles. In addition to guided tours and discussion points, there was a more formal lesson on the solar system delivered by the museum administrator, who was obviously a knowledgeable scientist and astronomer in his own right and inspired abler pupils, many of whom took the opportunity to ask probing and interesting questions. The demonstration of distances in the solar system, using a 'washing line' stretched across the room, brought the subject home to less cerebral learners. For more kinaesthetic learners the workshop where orreries were made allowed more creative pupils to excel.

When asked if any of the day's activities could have taken place in the classroom, the teacher noted that even the orreries workshop would be impossible as the materials were not readily available, and in any case running the workshop away from the context of the rest of the visit – including examination of historic and modern orreries – would be far less effective.

Educational Resources and Facilities – What Impressed the Sandford Award Judge?

'The key resource is the people who deliver the programmes: their knowledge, skills and experience ensure that the educational potential of school visits is maximised. In addition, the interpretation of the historic property enhances learning through period settings and the use of original and replica objects, some of which can be handled. Printed materials such as trail sheets, coupled with versions designed for teachers to use to promote discussion, add structure to the visit and ensure that learning objectives are met.'

‘The 10 minute introductory video ... serves well to set the context and the dedicated room where it is shown – the ‘star vault’ – has been well designed to allow for minimal distraction. A digital orrery available as an app on a set of tablets had been used in the solar system session, and it was pointed out that this was available to schools and the teacher said she would use it in the classroom.’

‘The needs of visitors with access issues have been considered, and a computer is available to offer further information and a version of the film to any visitor who has physical access issues which prevent them visiting the basement or top two floors of the house.’

‘As the Herschel Museum has very little space, the education room at No. 1 Royal Crescent is used for school workshops. Here there is room for a full class, with wipe-clean tables and running water to allow for a wide range of creative activities. Walking between the two venues could present some problems during bad weather but also offers a change of scene, breaking up the day.’

‘In 2019 the BPT received funding enabling it to offer an outreach service for secondary schools, with telescope sessions and expert talks for GCSE Physics classes and Astronomy Clubs. The BPT website offers supporting information related to school visits.’